

Male-to-Female Transgender and Transsexual Clients of HIV Service Programs in Los Angeles County, California

Jordan W. Edwards, MA, Dennis G. Fisher, PhD, and Grace L. Reynolds, DPA

Data on HIV risk were collected with the Countywide Risk Assessment Survey from 2126 participants; 92 were male-to-female transgender persons (i.e., cross-dressers, and those who identify with the opposite sex), and 9 were male-to-female transsexual individuals (i.e., those who have undergone gender-reassignment surgery or other procedures). Transgender-identified individuals were more likely than the rest of the sample to have received hormone injections, offensive comments, and HIV testing; injected hormones with a used needle; been Asian or American Indian; been paid for sexual intercourse; and lived in unstable housing but less likely to have used heroin. Transgender-identified individuals are at high risk for HIV infection because of reuse of needles and being paid for sexual intercourse. (*Am J Public Health.* 2007;97:1030–1033. doi:10.2105/AJPH.2006.097717)

Research studies have consistently reported that transgender persons (i.e., cross-dressers, and those who identify with the opposite sex) are at high risk for HIV infection.^{1–10} However, despite these findings, very little prevention education has targeted this population.^{11–13} Transgender persons are one of the highest HIV prevalence groups, with a prevalence rate of 35% found in male-to-female transgender-identified persons in San Francisco, Calif.² In a Los Angeles, Calif, study, the

HIV seroprevalence of transgender persons was found to be 22%, higher than that for all other groups except for gay and bisexual men in selected high-risk groups.⁸ Within this at-risk group, transgender commercial sex workers have been reported to be at an even greater HIV infection risk.^{7,14}

Some studies also have reported transgender persons to be at a heightened risk for substance abuse.^{3,15,16} One particular concern was that heroin use was shown to be a risk factor for transgender persons in San Francisco, which increased HIV risk through use of used needles.¹⁵ In addition to illicit injection drug use, transgender persons have poor access to intramuscular needles needed for hormone injections.¹¹

Ethnicity also has been associated with HIV prevalence in transgender persons. In fact, 63% of Black male-to-female transgender persons were HIV positive in a San Francisco study.¹³ Because a large proportion of the transgender research has been conducted in San Francisco, similar studies need to be conducted in other US cities to assess the HIV risk of transgender individuals.²

The following research was conducted in Los Angeles to describe transgender individuals who access HIV prevention programs funded by Los Angeles County as well as to assess their HIV risk. The unique sampling in the current research allowed for a comparison group of nontransgender clients. Obtaining respondents from all 51 prevention agencies funded by Los Angeles County added to the strength of this study.

METHODS

The Los Angeles County Department of Health Services, Office of AIDS Programs and Policy (OAPP), conducts an annual risk assessment survey. Information gathered from the Countywide Risk Assessment Survey is used to identify populations at risk, prioritize funding for HIV prevention in Los Angeles County, and find better ways to provide HIV prevention services. Data were collected in May and June 2004 by 220 HIV prevention service provider staff from 51 OAPP-funded agencies.

Of the 2514 surveys issued, interviewers returned 2126 surveys (84.6% survey return

rate). Surveys were administered face-to-face in various settings. All interviewers completed a 6-hour training session.

The Countywide Risk Assessment Survey assessed demographics, sexual history, substance use, use of HIV prevention services, and perceptions regarding HIV and AIDS. Interviews lasted between 15 and 30 minutes. Research staff from OAPP provided ongoing technical assistance to interviewers and agencies.

The study used 2-tiered sampling, which included both stratified and systematic sampling. Stratified sampling was chosen because we believed that program characteristics differed

among the various agencies. Systematic sampling was used in that interviewers were given a number (n) and were asked to interview every nth client participating within the agency.

Complete data from 2126 responses were used in the analysis. The mean age of the participants was 32.7 (SD=10.99) years and ranged from 12 to 69 years. The racial/ethnic mix was 44% Latino, 27% Black, 17% White, 5% Asian/Pacific Islander, 2% American Indian, and 5% other. Of the participants older than 18 years, approximately 28% reported that they had not received at least a high school diploma (Table 1).

RESULTS

Of the 2126 participants who completed the interview, 96 (4.5%) self-identified as male-to-female transgender and 11 (0.5%) self-identified as a male-to-female transsexual (i.e., someone who has undergone gender-reassignment surgery or some other procedure). These 2 categories were collapsed into 1 transgender-identified group for analysis purposes. The mean age of the transgender-identified group participants was 34.4 years (SD=9.91) and ranged from 19 to 63. The racial/ethnic mix of the transgender-identified group was 41% Latino, 24% Black, 16% Asian/Pacific Islander, 7% American Indian, 7% White, and 5% other.

Of those who reported an HIV test result, 43 of 82 (52.44%; 95% confidence interval [CI]=40.67, 62.92) of the transgender-identified group reported that they were HIV positive compared with 324 of 1458 (22.2%; 95% CI=20.11, 24.45) of the nontransgender-identified group. An important note is that the transgender-identified group participants were more likely than the nontransgender-identified group participants to be HIV positive ($\chi^2_1=39.1$; $P<.001$; odds ratio [OR]=3.76; 95% CI=2.40, 5.89). However, HIV status did not enter the logistic regression model (described in the following paragraph). Black transgender-identified individuals were more likely than the rest of the transgendered sample to report that they were HIV positive (Fisher exact test=.0270). Asian transgender-identified individuals were less likely than the rest of the transgendered sample to report that they were HIV positive (Fisher exact test=.0369).

All of the Countywide Risk Assessment Survey items were considered for possible inclusion in building the logistic regression model predicting the transgender-identified group. As shown in Table 2, factors positively associated with transgender identification include using a needle to inject steroids or hormones in the past 6 months; having ever received offensive comments because of gender identity; using a needle after someone else in the past 6 months; being Asian; having ever been paid for sexual intercourse; living in a hotel, motel, or rooming house; living on the streets; and having ever received HIV

TABLE 1—Transgender and Nontransgender Group Demographics (N = 2126): Countywide Risk Assessment Survey, Los Angeles County, May and June 2004

Demographic	Transgender-Identified Group (n = 107), No. (%)	Nontransgender-Identified Group (n = 2019), No. (%)	Statistic	P
Age group, y			$z = 2.07^a$.04
< 18	0 (0)	89 (4)		
18–30	43 (40)	882 (44)		
31–40	30 (28)	534 (26)		
41–60	33 (31)	501 (25)		
> 60	1 (1)	10 (0.5)		
Gender identity			$\chi^2_3 = 94.3$.001
Male	NA	1334 (66)		
Female	NA	682 (34)		
Transgender ^b	96 (90)	NA		
Transsexual ^c	11 (10)	NA		
Sexual orientation				
Heterosexual	38 (36)	1103 (55)		
Homosexual	41 (38)	589 (29)		
Bisexual	11 (10)	291 (14)		
Other	17 (16)	33 (2)		
Completed education			$z = 0.81^a$.42
< High school/GED	36 (34)	553 (27)		
High school/GED	34 (32)	772 (38)		
Some college	29 (27)	484 (24)		
4-year college	6 (6)	150 (7)		
Graduate school	2 (2)	55 (3)		
HIV-positive status	43 (52) ^d	324 (22) ^e	$\chi^2_1 = 39.1$.001
Born outside the United States	40 (37)	446 (22)	$\chi^2_1 = 13.4$.003

Note. NA = not applicable; GED = general equivalency diploma.

^aWilcoxon rank sum test.

^bMale-to-female. Individuals in this category included cross-dressers and those who identified with the opposite sex.

^cMale-to-female. Individuals in this category included those who had undergone gender-reassignment surgery or other procedures.

^dHIV test data not obtained for all participants and some data are missing, so number of participants for this category is 82.

^eNumber of participants for this category is 1458 because of missing data.

TABLE 2—Factors Associated With Transgender Identification for Clients Receiving HIV Prevention Services in Los Angeles County, 2004

	B	SE	OR (95% CI)
Used a needle for injecting steroids or hormones in past 6 months	2.41	0.31	11.14 (6.09, 20.37)
Received offensive comments because of sexual orientation	2.12	0.33	8.36 (4.36, 16.04)
Asian (vs non-Asian)	1.87	0.41	6.46 (2.90, 14.36)
Having ever been paid for sexual intercourse	1.46	0.28	4.29 (2.48, 7.45)
Living in a hotel, motel, or rooming house	1.66	0.42	5.23 (2.30, 11.90)
American Indian (vs non-American Indian)	1.50	0.55	4.50 (1.52, 13.31)
Injected drugs or hormones using a previously used needle in past 6 months	1.27	0.60	3.57 (1.09, 11.66)
Living on the streets	1.36	0.43	3.90 (1.67, 9.10)
Received HIV testing or counseling in past 6 months	0.61	0.25	1.84 (1.14, 2.99)
Used heroin in the past 6 months	-3.10	0.82	0.05 ^a (0.01, 0.23)

Note. B = parameter estimate; OR = odds ratio; CI = confidence interval. Deviance χ^2 (110, n = 2068) = 78.9442, value/df = 0.7177; $P = .989$. Area under the receiver operating characteristic curve = 91%.

^aORs < 1 indicate an inverse association.

testing or counseling. One inverse relation for transgender-identified group membership was use of heroin in the past 6 months.

DISCUSSION

Transgender-identified group clients in this study were significantly more likely than the rest of the sample to experience verbal stigmatization, to engage in commercial sex work, to share needles, and to have unstable housing than were other clients. Transgender-identified group clients were less likely to have used heroin. Stigma and discrimination contribute to high unemployment rates in transgender individuals.^{5,13} This contributes to the unstable living conditions seen in the current research. The combination of poverty conditions and unemployment place transgender individuals at increased risk for engaging in commercial sex work.¹ Transgender-identified group clients were more likely to engage in sex work than were nontransgender-identified clients.

While engaging in commercial sex work, transgender sex workers are more likely to engage in unprotected anal sex, which places them at increased risk for HIV infection.¹³ A willingness to engage in anal sex to feel more feminine places transgender sex workers at increased infection risk.⁵ Transgender-identified group clients in the current study were more likely to have been paid for

sexual intercourse. Previous studies also have reported mixed results concerning the awareness of possible HIV infection.^{5–7} Transgender-identified group clients in Los Angeles appeared to recognize the increased risk of HIV infection because they used HIV testing services at a significantly higher rate compared with other clients.

Transgender individuals are also at higher risk for HIV infection from use of needles.^{7,11,14,15} Many transgender individuals use injection hormones instead of oral pills because of a widespread belief that injections work better.⁷ However, use of new needles is difficult because of their high cost and low availability.¹¹ This combination places transgender individuals at an increased HIV infection risk through the sharing and reuse of needles used for hormone injection.¹¹ In the current study, transgender-identified group clients were significantly more likely to have injected with a used needle and thus increased their risk for infection compared with other clients. However, transgender-identified group clients were not more likely to inject illicit drugs than were other clients but instead used hormones more often. Now that California has authorized counties to allow the sale of new needles without a prescription, this risk may decrease.

Contrary to other reports, the transgender-identified group clients in this sample were significantly less likely to use heroin. Previous

research studies conducted in San Francisco and Quebec have reported that transgender individuals were more likely to use heroin.^{11,15} A strength of our study's questionnaire was that it allowed us to distinguish hormone injections from other substances. Future research should continue to differentiate these injection behaviors.

The high HIV prevalence in transgender individuals is of particular concern. In the current sample, 52% of the transgender-identified group clients self-reported that they were HIV positive compared with 22% of the nontransgender-identified clients. This alarming discrepancy must be continuously addressed.

Limitations

The current sample is a fair and unbiased representation of people receiving services from Los Angeles County. However, a limitation was that some of the OAPP programs specifically required the provider to target services to transgender clients. Therefore, our sample cannot be considered to be representative of all persons at risk for HIV in Los Angeles County. Another limitation was that the range of possible answers to the question on sexual preference resulted in many of the transgender-identified group answering "other." More choices should be added to future questionnaires.

Conclusions

Future HIV interventions targeting transgender individuals should educate clients about the risk of infection through hormone injection. In addition, educating individuals on the equally effective use of oral hormones can help to reduce HIV and other bloodborne pathogen infection risk. Transgender clients should have counseling services available to assist in dealing with stigmatization. Tailoring an intervention for transgender-identified groups could help reduce infection in one of the groups with the highest rate of HIV infection. ■

About the Authors

At the time of the study, Jordan W. Edwards was with California State University, Long Beach. Dennis G. Fisher and Grace L. Reynolds are with the Center for Behavioral Research and Services, California State University, Long Beach.

Requests for reprints should be sent to Dennis G. Fisher, PhD, Center for Behavioral Research and Services, 1090 Atlantic Ave, Long Beach, CA 90813 (e-mail: dfisher@csulb.edu).

This brief was accepted December 10, 2006.

Contributors

J.W. Edwards completed most of the analysis and writing. D.G. Fisher directed and designed the analysis, supervised and edited the writing, and made most of the revisions. G.L. Reynolds edited the article, assisted with the syntax and data analysis, and helped write the "Results" section and make revisions.

Acknowledgments

This research was funded in part by the City of Long Beach, Calif, Department of Health and Human Services (contract 28569). Further support was provided by the Los Angeles County, Calif, Office of AIDS Programs and Policy (contracts 700938 and 700939).

Human Participant Protection

The Los Angeles County Department of Health Services institutional review board approved all forms and procedures.

References

1. Kellogg TA, Clements-Nolle K, Dilley J, Katz MH, McFarland W. Incidence of human immunodeficiency virus among male-to-female transgendered persons in San Francisco. *J Acquir Immune Defic Syndr*. 2001;28:380–384.
2. Clements-Nolle K, Marx R, Guzman R, Katz MH. HIV prevalence, risk behaviors, health care use, and mental health status of transgender persons: implications for public health intervention. *Am J Public Health*. 2001;91:915–921.
3. Clements-Nolle K, Wilkinson W, Kitano K, Marx R. HIV prevention and health service needs of the transgender community in San Francisco. In: Bockting W, Kirk S, eds. *Transgender and HIV: Risks, Prevention, and Care*. Vol XXIV. New York, NY: Haworth Press Inc; 2001:69–90.
4. Bockting WO, Robinson BE, Forberg J, Scheltema K. Evaluation of a sexual health approach to reducing HIV/STD risk in the transgender community. *AIDS Care*. 2005;17:289–303.
5. Bockting WO, Robinson BE, Rosser BRS. Transgender HIV prevention: a qualitative needs assessment. *AIDS Care*. 1998;10:505–526.
6. Kenagy GP. HIV among transgendered people. *AIDS Care*. 2002;14:127–134.
7. Nemoto T, Luke D, Mamo L, Ching A, Patria J. HIV risk behaviours among male-to-female transgenders in comparison with homosexual or bisexual males and heterosexual females. *AIDS Care*. 1999;11:297–312.
8. Reback CJ, Simon P. *The Los Angeles Transgender Health Study: Creating Research and Community Collaboration*. Vol XVIII. New York, NY: Haworth Press Inc; 2004.
9. Schwarcz S, Scheer S. HIV testing behaviors and knowledge of HIV reporting regulations among male-to-female transgenders. *J Acquir Immune Defic Syndr*. 2004;37:1326–1327.
10. Nemoto T, Operario D, Keatley J, Nguyen H, Sugano E. Promoting health for transgender women: Transgender Resources and Neighborhood Space (TRANS) program in San Francisco. *Am J Public Health*. 2005;95:382–384.
11. Namaste VK. HIV/AIDS and female to male transsexuals and transvestites: results from a needs assessment in Quebec. *Int J Transgenderism*. 1999; 3(1 and 2). Available at: http://www.symposion.com/ijt/hiv_risk/namaste.htm. Accessed April 11, 2007.
12. Bockting WO, Rosser BRS, Coleman E. *Transgender HIV Prevention: Community Involvement and Empowerment*. Vol XXIV. New York, NY: Haworth Press Inc; 2001.
13. Nemoto T, Operario D, Keatley J, Han L, Soma T. HIV risk behaviors among male-to-female transgender persons of color in San Francisco. *Am J Public Health*. 2004;94:1193–1199.
14. Reback CJ, Lombardi EL. HIV risk behaviors of male-to-female transgenders in a community-based harm reduction program. *Int J Transgenderism*. 1999; 3(1 and 2). Available at: http://www.symposium.com/ijt/hiv_risk/reback.htm. Accessed April 24, 2007.
15. Seal KH, Kral AH, Gee L, et al. Predictors and prevention of nonfatal overdose among street-recruited injection drug users in the San Francisco Bay Area, 1998–1999. *Am J Public Health*. 2001;91:1842–1846.
16. Hughes TL, Eliason M. Substance use and abuse in lesbian, gay, bisexual and transgender populations. *J Prim Prev*. 2002;22:263–298.